

Claims 3, 6 and 9 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. These rejections are respectfully traversed for the following reasons. Claim 3 presents chemical formulae for the resin where the “n” is commonly used to designate a number of monomers (identified in brackets) that are joined together to form the polymer. In claim 6, the reticulation agent “hexamine” has the formal name “hexamethylene tetramine”, and claim 6 has been amended to delete the letter “(B)” to make it consistent with the specification. Claim 9 as presented, at line 20 of page 11, includes the following: “atm and the temperature is from 80 to 160°C.”

Claims 1, 6 and 7 were objected to and have been amended to overcome these objections.

Claims 1, 5-7 and 12-14 were rejected under 35 U.S.C. 102(b) as being anticipated by Iimuro; and claims 2-4, 8-11 and 15-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Iimuro in view of Kane. These rejections are respectfully traversed.

The feature of the present invention is that it obtains “polymeric composition for friction element” which is excellent using the resin mixture. On the other hand, Iimuro indicates the preparation process of resin composition as a generation thing from the reaction.

It is indicated as “in the case of using these articles or products for friction materials, the field of use is restricted due to lowering of friction coefficient at high temperatures” in the “Background of the invention” of Iimuro. That is, by mere polymeric composition, it was thought that the use as friction material was difficult. By the pile of practical research and development, the present invention solves the above-mentioned problem.

Iimuro indicates the reaction of silanol groups and phenol-based resin. However, there are no publication and suggestion in terms of “a part at least of the free phenolic groups of the starting phenolic are consumed in such bonds and will not longer be available for water absorption” as described in the present invention. As mentioned above, the present invention

essentially differs from Iimuro.

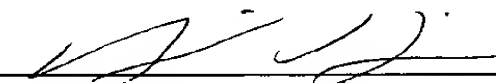
There is no teaching or suggestion for combining Iimuro, which is essentially different from the present invention, with Kane.

In view of the above, it is believed that all claims are now in condition for allowance and such favorable action is earnestly solicited.

Respectfully submitted,

Vasilios KANELLOPOULOS, et al.

8-9-02
Date

By: 
Richard L. Fix
Reg. No. 28,297

HENDERSON & STURM LLP
206 Sixth Avenue, Suite 1213
Des Moines, Iowa 50309-4076
Telephone: (515) 288-9589
Telefax: (515) 288-4860

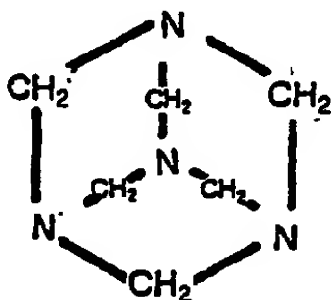
Version With Markings to Show Changes Made

Claim 1:

1. (Amended) A polymeric composition for friction elements which comprises a co-polymer between (I) a resin containing phenolic groups and a reticulation agent, (II) an organopolysiloxane resin containing terminal silanol group, [a part] at least part of the phenolic groups being bound to the terminal silanol groups, and an epoxy resin or an epoxidised organopolysiloxane (III).

Claim 6:

6. (Amended) A Polymeric composition according to [any of the preceding] claim[s] 1, in which the reticulation agent is hexamine of formula [(B)]:



Claim 7:

7. (Amended) A process of preparation of a polymeric according to [any of the preceding] claim[s] 1, comprising the following steps:

- a) mixing (I) a resin containing the phenolic groups and the reticulation agent, (II) resin containing the terminal silanol groups, and (III) an epoxy resin or the epoxidised organopolysiloxane
- b) curing the mixture for a period of time sufficient to complete substantially the reaction

between the phenolic groups and the terminal silanol groups,

c) post-heating the product obtained under b).